

Now Padford 14

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Report Summary:

<u>hlights</u>	<u>January 1, 2012</u>	<u>January 1, 2014</u>
Contributions		
Funding Schedule FY 2015	\$28,253,951	\$28,253,951
Funding Schedule FY 2016	29,246,209	29,758,906
Funded Ratios		
GAS No. 25	41.6%	42.5%
<u>Participants</u>		
Actives	1,917	1,903
Retirees and Beneficiaries	1,429	1,470
Inactives	481	454
Disabled	<u>345</u>	<u>342</u>
Total	4,172	4,169
<u>Payroll</u>		
Payroll of Active Members	\$82,496,640	\$84,425,116
Average Payroll	43,034	44,364
Normal Cost		
Employer	2,996,523	3,156,615
Employee	6,948,736	7,212,866
Administrative Expenses and Section 3(8)(c)	<u>1,300,000</u>	1,450,000
Total	11,245,259	11,819,481
Actuarial Accrued Liabilities		
Actives	222,864,254	230,625,553
Retirees, Beneficiaries, Disabilities and Inactives	354,602,479	376,303,950
Total	577,466,733	606,929,503
Actuarial Value of Assets	239,973,702	<u>258,136,977</u>
Unfunded Actuarial Accrued Liabilities	\$337,493,031	\$348,792,526

Introduction

This report presents the findings of an actuarial valuation as of January 1, 2014, of New Bedford Contributory Retirement System.

The actuarial valuation is based on:

- Provisions Chapter 32 of the Massachusetts General Laws, "M.G.L", as of January 1, 2014.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the City of New Bedford Contributory Retirement System
- Actuarial assumptions approved by the Retirement Board

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2014.

The valuation and forecast do not account for:

- Any subsequent changes in the law
- State-mandated benefits
- Cost-of-living increases granted to retired members between 1982 and 1997. The
 cost of these benefits has been assumed by the State under Proposition Two and
 One-Half.

Actuarial Experience

In performing the actuarial valuation, various assumptions are made regarding such factors as mortality, retirement, disability, and withdrawal rates as well as both payroll, salary increases, and investment returns. A comparison of the current valuation and the prior valuation is made to determine how closely actual experience corresponded to anticipated occurrences. This analysis of the system provides insight into the overall quality of the actuarial assumptions and helps explain any change in the annual appropriation.

During the last year, the total unfunded actuarial accrued liability increased by 1.7% to \$348,792,526. The increase is the result of net unfavorable actuarial experience during the preceding years. The sources of actuarial (gains) and losses are as follows:

Assets	7,127,077
Salary Increases	(2,644,998)
New Participants	809,393
Active - Retirements	491,052
Active - Terminations	701,927
Active - Mortality	293,206
Active - Disabilities	(2,340,734)
Inactive - Mortality and data adjustments	(42,720)
Other, includes data adjustments, buybacks, interest on ASF	(211,918)
Total Actuarial (Gain) / Loss	4,182,285

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Actuarial Costs and Liabilities:

Normal Costs

The normal cost is the sum of the individual normal costs determined for each member as if the assumptions underlying the cost determinations had been exactly realized. An individual normal cost represents that part of the cost of a member's future benefits which are assigned to the current year as if the costs are to remain level as a percentage of the member's pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation. Anticipated employee contributions to be made during the year are subtracted from the total normal cost to determine employer normal cost. The total normal cost is divided by total payroll to determine the normal cost as a percent of pay. The normal cost is shown in Table I.

	Table I	
	<u>January 1, 2012</u>	<u>January 1, 2014</u>
Superannuation	\$6,148,117	\$6,210,025
Termination	788,981	898,720
Death	432,538	454,657
Disability	2,575,623	2,806,079
Administrative Expenses and Section	3(8)(c) <u>1,300,000</u>	<u>1,450,000</u>
Total Normal Cost	11,245,259	11,819,481
% of Pay	13.6%	14.0%
Employee Contributions	6,948,736	7,212,866
% of Pay	8.4%	8.5%
Employer Normal Cost	\$4,296,523	\$4,606,615
% of Pay	5.2%	5.5%

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Present Value of Actuarial Accrued Liabilities

The actuarial accrued liabilities (AAL) represents today's value of all benefits based on the past service of the actives and inactives. The AAL can be compared to the assets to determine the funded status of the Plan. The value of these earned benefits is shown in Table II below.

Table II		
	January 1, 2012	January 1, 2014
Actives		
Superannuations	\$187,671,962	\$192,749,466
Termination	3,295,457	3,265,550
Death	6,210,261	6,344,354
Disability	25,686,574	28,266,183
Retirees and Inactives		
Retirees and Beneficiaries	237,584,029	259,114,922
Terminated (Refund)	5,226,073	5,667,361
Disabled	111,792,377	111,521,667
Total	\$577,466,733	\$606,929,503

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Present Value of Future Benefits

The present value of future benefits represents today's value of all benefits earned by the inactive participants as well as all benefits earned and expected to be earned in the coming years by the active participants. The difference between the present value of future benefits and the present value of actuarial accrued liabilities is the value of benefits to be earned in the coming years. The value of the total expected benefits is shown in Table III.

Table III		
	<u>January 1, 2012</u>	January 1, 2014
Actives		
Superannuation	\$235,121,129	\$300,801,012
Termination	6,536,804	13,045,178
Death	9,408,990	13,408,504
Disability	49,339,371	12,279,666
Retirees and Inactives		
Retirees and Beneficiaries	237,584,029	259,114,922
Terminated (Refund)	5,226,073	5,667,361
Disabled	111,792,377	111,521,667
Total	\$655,008,773	\$715,838,310

Funded Status and Appropriations:

Market Value of Plan Assets

The trust fund composition on a market value basis is shown in Table IV.

Tab	ole IV	
	<u>January 1, 2012</u>	<u>January 1, 2014</u>
Cash equivalents	\$8,669,331	\$5,708,211
Short term investments	0	0
Fixed income securities	38,718,284	43,754,205
Equities	114,347,062	158,668,399
International	25,241,365	36,219,317
Real Estate	16,987,733	18,138,993
Venture Capital	0	0
Other	14,003,802	13,955,111
Accounts receivable	252,138	644,483
Accounts payable	(525,156)	(1,505,829)
Accrued income	<u>463,351</u>	416,697
Total Market Value	\$218,157,910	\$275,999,587
Total Actuarial Value	\$239,973,702	\$258,136,977

Actuarial Value of Assets

The actuarial value of assets is determined by projecting the market value of assets as of the beginning of the prior plan year with the assumed rate of return during that year (7.75%) and accounting for deposits and disbursements with interest at the assumed rate of return. An adjustment is then applied to recognize the difference between the actual investment return and expected return over a five year period. This preliminary actuarial value is not allowed to differ from the market value of assets by more than 10%. The calculation of the actuarial value of assets as of January 1, 2014 is presented in Table V.

Table V

		<u>January 1, 2014</u>
(1)	Market value at January 1, 2013	\$243,092,192
(2)	2013 Contributions	\$36,848,325
(3)	2013 Payments	(\$42,899,762)
(4)	Net interest adjustment at 7.75% on (1), (2), and (3) to December 31, 2013	\$18,605,152
(5)	Expected market value on January 1, 2014	\$255,645,907
	(1) + (2) + (3) + (4)	
(6)	Actual market value on January 1, 2014	\$275,999,587
(7)	2013 (Gain) / Loss	(\$20,353,680)
(8)	80% of 2013 (Gain) / Loss	(\$16,282,944)
(9)	2012 (Gain) / Loss	(\$13,472,287)
(10)	60% of 2012 (Gain) / Loss	(\$8,083,372)
(11)	2011 (Gain) / Loss	\$21,811,312
(12)	40% of 2011 (Gain) / Loss	\$8,724,525
(13)	2010 (Gain) / Loss	(\$11,104,093)
(14)	20% of 2010 (Gain) / Loss	(\$2,220,819)
(15)	Actuarial value on January 1, 2014, $(6) + (8) + (10) + (12) + (14)$	
	but not less than 90% nor greater than 110% of (6)	\$258,136,977
(16)	Ratio of actuarial value to market value	93.53%
(17)	Actuarial Value Return for 2012	1.26%
(18)	Actuarial Value Return for 2013	11.28%
(19)	Market Value Return for 2012	14.00%
(20)	Market Value Return for 2013	16.23%

Unfunded Actuarial Accrued Liabilities

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Accrued Liability represents what the accumulated assets would have been as of the valuation date if:

- current plan provisions and assumptions had always been in effect,
- experience conformed exactly to assumptions, and
- the normal cost had been contributed each year since inception.

The actuarial value of the Fund's assets as of the end of the prior year are subtracted from the Actuarial Accrued Liability (AAL) to determine the Unfunded Actuarial Accrued Liability (UAAL) as of the valuation date. Over time, annual pension contributions will accumulate Plan assets equal to the AAL, and the UAAL will be eliminated. Thereafter, annual contributions equal to the normal cost will keep the Plan's assets and liabilities in balance. The UAAL is developed in Table VI.

	Table VI		
		January 1, 2012	January 1, 2014
Actuarial Accrued Liability		\$577,466,733	\$606,929,503
Actuarial Assets		239,973,702	258,136,977
Unfunded Actuarial Accrued Liability		\$337,493,031	\$348,792,526
Funded Status		41.6%	42.5%

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Appropriations

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the requirements set forth in Sections 22D and 22F of Chapter 32 of the Massachusetts General Laws. These amounts were calculated to comply with the June 30, 2040, full funding mandate for all accrued liabilities. The pension appropriation is the sum of the:

- Employer normal cost,
- Increasing amortization of the unfunded actuarial accrued liability by June 30, 2036 \$346,059,258 over 22 years with 4.0% increasing payments
- Level amortization of the Early Retirement Incentive by June 30, 2019 \$ 2,733,268 over 5 years
- Interest adjustment for payments deposited August 1st.

The pension appropriation is shown in Table VII.

	<u>January 1, 2012</u>	January 1, 2014
Normal cost	\$4,296,523	\$4,606,615
Amortization payment of the accrued liability	20,294,154	22,250,884
Amortization payment of 2002 ERI liability	<u>631,146</u>	631,146
Total cost	\$25,221,823	\$27,488,645
% of Pay	30.6%	32.6%
Fiscal 2015 cost	\$28,253,951	\$28,253,951
Fiscal 2016 cost	\$29,246,209	\$29,758,906

Appropriation Forecast

The following exhibit forecasts employer and employee contributions over the next 32 years under the adopted funding schedule.

Note that the forecast is based upon an "open group" method. This method assumes that sufficient employees will be hired each year to keep the number constant. The total payroll of the system is expected to increase 4% per year. The employee contribution rate is expected to increase to 10.5% by 2044 as members contributing base percentages 5%, 7%, and 8% are replaced by new members, whose base contribution is 9%. Payments are assumed to be made at the beginning of the year.

The employer total cost is expected to increase during the next 24 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total cost represents 34.2% of payroll, increasing to 38.0% by the time the unfunded liabilities are fully paid off, leaving only a normal cost of 4.1% thereafter. The increase in the cost as a percentage of payroll is a result of the increase in amortization payments exceeding the increase in employee deductions.

Appropriation Forecast

Fiscal			Employer	Amortization	Employer	Employer	
Year		Employee	Normal Cost	Payments	Total Cost	Total Cost	Funded
Ending	Payroll*	Contribution	with Interest	with Interest	with Interest	% of Payroll	Ratio %**
2015	\$84,425,116	\$7,212,866	\$4,811,627	\$23,442,324	\$28,253,951	33.5	42.5
2016	\$86,957,869	\$7,487,918	\$4,894,699	\$24,864,207	\$29,758,906	34.2	44.0
2017	\$89,566,606	\$7,772,982	\$4,978,424	\$25,832,405	\$30,810,829	34.4	45.7
2018	\$92,253,604	\$8,068,411	\$5,062,768	\$26,839,332	\$31,902,100	34.6	47.4
2019	\$95,021,212	\$8,374,569	\$5,147,692	\$27,886,536	\$33,034,228	34.8	49.2
2020	\$97,871,848	\$8,691,836	\$5,233,155	\$28,316,394	\$33,549,549	34.3	51.1
2021	\$100,808,004	\$9,020,602	\$5,319,112	\$29,449,049	\$34,768,161	34.5	53.0
2022	\$103,832,244	\$9,361,270	\$5,405,517	\$30,627,011	\$36,032,528	34.7	55.1
2023	\$106,947,211	\$9,714,261	\$5,492,319	\$31,852,092	\$37,344,411	34.9	57.2
2024	\$110,155,627	\$10,080,005	\$5,579,465	\$33,126,175	\$38,705,640	35.1	59.4
2025	\$113,460,296	\$10,458,952	\$5,666,896	\$34,451,222	\$40,118,118	35.4	61.7
2026	\$116,864,105	\$10,851,563	\$5,754,551	\$35,829,271	\$41,583,822	35.6	64.2
2027	\$120,370,028	\$11,258,318	\$5,842,366	\$37,262,442	\$43,104,808	35.8	66.8
2028	\$123,981,129	\$11,679,711	\$5,930,270	\$38,752,940	\$44,683,210	36.0	69.5
2029	\$127,700,563	\$12,116,256	\$6,018,190	\$40,303,057	\$46,321,247	36.3	72.3
2030	\$131,531,580	\$12,568,482	\$6,106,049	\$41,915,180	\$48,021,229	36.5	75.3
2031	\$135,477,527	\$13,036,937	\$6,193,762	\$43,591,787	\$49,785,549	36.7	78.5
2032	\$139,541,853	\$13,522,187	\$6,281,243	\$45,335,458	\$51,616,701	37.0	81.7
2033	\$143,728,109	\$14,024,819	\$6,368,399	\$47,148,877	\$53,517,276	37.2	85.1
2034	\$148,039,952	\$14,545,440	\$6,455,130	\$49,034,832	\$55,489,962	37.5	88.7
2035	\$152,481,150	\$15,084,675	\$6,541,334	\$50,996,225	\$57,537,559	37.7	92.3
2036	\$157,055,585	\$15,643,173	\$6,626,901	\$53,036,074	\$59,662,975	38.0	96.1
2037	\$161,767,253	\$16,221,605	\$6,711,714	\$0	\$6,711,714	4.1	100.0
2038	\$166,620,270	\$16,820,664	\$6,795,652	\$0	\$6,795,652	4.1	100.0
2039	\$171,618,878	\$17,441,067	\$6,878,585	\$0	\$6,878,585	4.0	100.0
2040	\$176,767,445	\$18,083,555	\$6,960,379	\$0	\$6,960,379	3.9	100.0
2041	\$182,070,468	\$18,748,896	\$7,040,889	\$0	\$7,040,889	3.9	100.0
2042	\$187,532,582	\$19,437,882	\$7,119,966	\$0	\$7,119,966	3.8	100.0
2043	\$193,158,559	\$20,151,334	\$7,197,451	\$0	\$7,197,451	3.7	100.0
2044	\$198,953,316	\$20,890,098	\$7,273,176	\$0	\$7,273,176	3.7	100.0
2045	\$204,921,916	\$21,516,801	\$7,491,372	\$0	\$7,491,372	3.7	100.0
2046	\$211,069,573	\$22,162,305	\$7,716,113	\$0	\$7,716,113	3.7	100.0
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^{*} Calendar basis

^{**} Beginning of Fiscal Year

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GASB Statements No. 25 and No. 27

Effective for periods beginning after June 15, 1997, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which replace GASB Statement No. 5, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

Footnote disclosures required by GASB Statement No. 25 and 27 include a description of the plan, a summary of significant accounting policies, and information about contributions, legally required reserves, and investment concentrations. As a result of the oversight of the Public Employees Retirement Administration Commission (PERAC) and the conversion of unpaid contributions to pension related debt, the Net Pension Obligation (NPO) as required by Statement No. 27 will effectively always be equal to \$0. The required disclosure information is shown in Table VIII.

Table VIII				
		<u>January 1, 2012</u>	January 1, 2014	
(1)	Actuarial Accrued Liability	\$577,466,733	\$606,929,503	
(2)	Actuarial Value of Assets	239,973,702	258,136,977	
(3)	Unfunded Actuarial Accrued Liability	337,493,031	348,792,526	
(4)	Funded Ratio (2)/(1)	41.6%	42.5%	
(5)	Covered Payroll	\$82,496,640	\$84,425,116	
(6)	UAAL as a percentage of payroll: (3)/(5)	409.1%	413.1%	
(7)	Annual Required Contribution (ARC)	\$27,297,326	\$28,253,951	
(8)	Net Pension Obligation	\$0	\$0	

3.0%

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Rate of Salary Increase:

PERAC Annual Statement APPENDIX PAGE 3 ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by Sherman Actuarial Services as of January 1, 2014.

The normal cost for employees on that date was:	\$7,212,866	8.5% of pay
The normal cost for the employer was:	3,156,615	3.7% of pay
The actuarial liability for active members was:		\$230,625,553
The actuarial liability for retired and inactive members was:		376,303,950
Total actuarial accrued liability:		606,929,503
System assets as of that date:		258,136,977
Unfunded actuarial accrued liability:		\$348,792,526
The ratio of system's assets to total actuarial liability was		42.5%
The principal actuarial assumptions used in the valuation are as follows:		
The state of the s		
Investment Return:		7.75%

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued	Funded Ratio	Covered Payroll	uaal as a percent of Covered
	(a)	(b)	Liability (b-a)	(a/b)	(c)	Payroll (b-a)/c
01/01/14	\$258,136,977	\$606,929,503	\$348,792,526	42.5%	\$84,425,116	413.1%
01/01/12	239,973,702	577,466,733	337,493,031	41.6%	82,496,640	409.1%
01/01/10	226,978,870	545,614,798	318,635,928	41.6%	82,625,990	385.6%
01/01/09	196,465,884	516,132,737	319,666,853	38.1%	90,036,405	355.0%
01/01/07	210,446,468	469,061,751	258,615,283	44.9%	86,659,224	298.4%
01/01/06	192,032,773	416,761,645	224,728,872	46.1%	81,884,807	274.4%
01/01/04	175,663,857	380,950,456	205,286,599	46.1%	75,414,151	272.2%
01/01/02	157,129,409	305,813,631	148,684,222	51.4%	75,089,435	198.0%
01/01/00	133,140,386	248,033,340	114,892,954	53.7%	63,312,483	181.5%

GASB Statements No. 67 and No. 68

Effective for periods beginning after June 15, 2013, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which amend GASB Statements No. 25 and No. 27, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

The statement requires the system to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position. The statement of fiduciary net position presents the following items as of the end of the plan's reporting period, as applicable:

- Assets
- Deferred outflows of resources (consumption of net assets by the employers that is applicable to a future reporting period)
- Liabilities
- Deferred inflows of resources (acquisition of net assets by the employers that is applicable to a future reporting period)
- Fiduciary net position (Assets + Deferred outflows Liabilities Deferred inflows)

The system is considered a cost-sharing multiple-employer pension plan since pension obligations exist for employees of more than one employer and plan assets can be used to pay the benefits of the employees of any employer.

This report does not include all items required under GASB Statements No. 67 and No. 68. Rather, it provides all items required that are not readily available from other sources such as the Annual Statement of the Financial Condition prepared by the Board, Chapter 32 of the Massachusetts General Laws and investment reports prepared by the plan's investment consultant.

Discount Rate

The discount rate, and all other actuarial assumptions, are the as those described in Exhibit 6. The discount rate was selected based on a projection of employer and employee contributions, benefit payments, expenses and the long term expected rate of return on trust assets. Under Chapter 32 of the Massachusetts Laws, employers are required to make the necessary contributions to the trust such that the plan reaches a full funding status by 2040. In addition, Chapter 32 also gives the Retirement Board the right to go directly to the Assessors of the community and add an additional property tax to bills for amounts not paid by employer.

Based on these laws and assumptions, the pensions plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

The Board selected 7.75% as the long term expectation of investment returns. The average return for the 29 years ending as of December 31, 2013 was 8.29%. The average return for the past 5 years ending December 31, 2013 was 12.38%.

Assets

The Net Position Restricted for Pensions, shown in page 7, is \$275,999,587. The 2013 Annual Statement of the Financial Condition contains the values for previous years and the changes in Net Position Restricted for Pensions. Investments are reported at fair value.

Net Pension Liability as of December 31, 2013 – GASB Statement No. 67

The following presents the net pension liability of the system calculated using the discount rate of 7.75%, as well as what the system's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.75%) or 1-percentage-point higher (8.75%) than the current rate:

	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)
Total Pension Liability	\$ 669,044,599	\$ 606,929,503	\$ 553,830,628
Plan Fiduciary Net Position	\$ 275,999,587	\$ 275,999,587	\$ 275,999,587
Net Pension Liability	\$ 393,045,012	\$ 330,929,916	\$ 277,831,041

The Plan Fiduciary Net Position as a percentage of the Total Pension Liability is 45.5%.

Net Pension Liability as of June 30, 2014 – GASB Statement No. 68

The following presents the net pension liability of the system calculated using the discount rate of 7.75%, as well as what the system's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.75%) or 1-percentage-point higher (8.75%) than the current rate:

	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)
Total Pension Liability	\$ 680,793,140	\$ 617,587,292	\$ 563,555,991
Plan Fiduciary Net Position*	\$ 286,313,099	\$ 286,313,099	\$ 286,313,099
Net Pension Liability	\$ 394,480,041	\$ 331,274,193	\$ 277,242,892

^{*}Estimated

The Plan Fiduciary Net Position as a percentage of the Total Pension Liability is 46.4%.

Schedules of Required Supplementary Information

	<u>2013</u>
Total Pension Liability – Beginning	n/a
Total Pension Liability – Ending (a)	\$ 606,929,503
Plan Fiduciary Net Position – Beginning	n/a
Plan Fiduciary Net Position – Ending (b)	\$ 275,999,587
Net Pension Liability – Ending (a) – (b)	\$ 330,929,916
Plan Fiduciary Net Positions as a percentage	
of the Total Pension Liability	45.5%
Covered-employee payroll	\$84,425,116
Net Pension Liability as a percentage of	
Covered-employee Payroll	392.0%

EXHIBITS

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Age/Service Distribution with Salary as of January 1, 2014

Attained Age	Average Salary <5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	15 41,359	0	0	0	0 0	0 0	0	0	0	15 41,359
20-24	39	0	0	0	0	0	0	0	0	39
20 24	30,430	0	0	0	0	0	0	0	0	30,430
25-29	88 38,828	15 40,946	1 50,042	0 0	0 0	0 0	0 0	0 0	0 0	104 39,241
30-34	63 40,407	71 50,306	14 54,042	0	0	0 0	0	0 0	0	148 46,446
35-39	46	59 50,076	51	17	1 0	0	0	0	0	174
40-44	33,751 43	44	56,485 51	52,850 63	30	0 4	0	0	0	47,915 235
	41,926	45,142	49,609	60,959	64,654	0	0	0	0	52,236
45-49	34 34,467	54 40,131	48 42,083	72 54,455	46 60,015	50 60,391	0	0	0	304 49,539
50-54	50 30,577	38 34,569	61 41,391	45 38,954	49 56,296	42 50,697	22 61,020	0 0	0 0	307 43,487
55-59	32 21,962	38 37,100	44 36,801	55 42,257	37 37,822	56 46,013	23 63,898	10 43,652	1 63,206	296 40,546
60-64	13 24,551	22 35,860	31 39,772	43 36,944	21 36,418	30 39,271	10 53,858	12 63,955	3 37,106	185 39,405
65-69	4 35,119	8 35,576	17 28,788	12 34,553	7 37,443	9 33,400	5 34,423	1 33,363	4 44,790	67 33,977
70+	1 25,574	3 0	6 35,109	2 35,045	8 38,025	4 24,440	1 41,343	3 35,728	1 78,500	29 36,966
Total Employees Average Salary	428 35,079	352 42,871	324 44,180	309 47,929	199 51,203	195 47,703	61 58,428	26 51,713	9 48,020	1,903 44,364

Retiree Distribution as of January 1, 2014

	Numbe	Number of Employees		Total			
Attained Age	Male	Female	Total	Male	Female	Total	
< 20	0	0	0	0	0	0	
20-24	0	0	0	0	0	0	
25-29	0	0	0	0	0	0	
30-34	1	0	1	6,040	0	6,040	
35-39	0	0	0	0	0	0	
40-44	2	0	2	52,417	0	52,417	
45-49	3	0	3	41,952	0	41,952	
50-54	9	2	11	223,826	48,412	272,238	
55-59	40	21	61	1,578,880	210,983	1,789,863	
60-64	99	64	163	3,404,202	1,302,199	4,706,401	
65-69	155	136	291	4,777,953	2,107,741	6,885,694	
70-74	124	116	240	3,142,393	1,622,664	4,765,057	
75-79	97	98	195	2,227,121	1,364,995	3,592,117	
80-84	89	94	183	1,719,182	1,141,064	2,860,245	
85-89	100	67	167	1,703,513	581,711	2,285,225	
90-94	67	40	107	903,389	318,344	1,221,732	
95+	31	17	48	382,987	121,195	504,183	
Total	817	655	1472	20,163,856	8,819,309	28,983,165	
Average (Age/Payment)	75.35	75.49	75.41	24,680	13,465	19,690	
Frequency Percent	55.5	44.5	100.0	69.6	30.4	100.0	

Disabled Retiree Distribution as of January 1, 2014

	Number of Employees		Total				
Attained Age	Male	Female	Total	Male	Female	Total	
< 20	0	0	0	0	0	0	
20-24	0	0	0	0	0	0	
25-29	0	0	0	0	0	0	
30-34	1	0	1	50,849	0	50,849	
35-39	2	1	3	110,912	3,763	114,675	
40-44	5	0	5	222,955	0	222,955	
45-49	8	1	9	385,028	4,778	389,806	
50-54	21	5	26	775,865	249,230	1,025,095	
55-59	50	3	53	2,073,345	52,038	2,125,382	
60-64	45	9	54	1,815,910	167,857	1,983,767	
65-69	60	8	68	2,225,589	198,600	2,424,188	
70-74	37	5	42	1,283,859	85,343	1,369,202	
75-79	33	1	34	1,051,188	23,121	1,074,309	
80-84	18	2	20	515,291	39,567	554,857	
85-89	16	2	18	367,339	18,709	386,048	
90-94	7	1	8	153,329	4,966	158,295	
95-99	1	0	1	6,875	0	6,875	
Total	304	38	342	11,038,334	847,971	11,886,305	
Average (Age/Payment)	69.2	67.9	69.1	36,310	22,315	34,755	
Frequency Percent	88.9	11.1	100.0	92.9	7.1	100.0	

EXHIBIT 4 - CASHFLOW FORECAST:

The following is a 30 year forecast of benefit payments net of state reimbursable COLA payments, Contribution Income and Investment Returns.

Plan Year Ending	Benefit Payments	Employee Contributions	Employer Contributions	Investment Returns	Net change in plan assets
2014	\$35,542,983	\$7,212,866	\$28,253,951	\$18,980,212	\$18,904,046
2015	36,679,819	7,487,918	29,758,906	19,951,515	20,518,520
2016	38,011,431	7,772,982	30,810,829	21,498,110	22,070,490
2017	39,297,314	8,068,411	31,902,100	23,167,318	23,840,515
2018	40,599,622	8,374,569	33,034,228	24,973,708	25,782,883
2019	41,933,307	8,691,836	33,549,549	26,909,279	27,217,356
2020	43,293,514	9,020,602	34,768,161	28,976,539	29,471,788
2021	44,735,774	9,361,270	36,032,528	31,216,134	31,874,158
2022	46,176,709	9,714,261	37,344,411	33,642,741	34,524,704
2023	47,523,405	10,080,005	38,705,640	36,279,166	37,541,406
2024	48,958,646	10,458,952	40,118,118	39,146,879	40,765,304
2025	50,346,400	10,851,563	41,583,822	42,267,157	44,356,142
2026	51,758,812	11,258,318	43,104,808	45,665,739	48,270,053
2027	53,036,526	11,679,711	44,683,210	49,373,773	52,700,168
2028	54,337,170	12,116,256	46,321,247	53,425,324	57,525,657
2029	55,582,101	12,568,482	48,021,229	57,854,074	62,861,683
2030	56,725,085	13,036,937	49,785,549	62,701,407	68,798,808
2031	57,713,332	13,522,187	51,616,701	68,015,973	75,441,530
2032	58,576,339	14,024,819	53,517,276	73,851,396	82,817,152
2033	59,308,086	14,545,440	55,489,962	80,264,770	90,992,086
2034	59,904,810	15,084,675	57,537,559	87,318,251	100,035,675
2035	60,303,076	15,643,173	59,662,975	95,081,642	110,084,714
2036	60,474,039	16,221,605	6,711,714	101,891,599	64,350,879
2037	60,462,265	16,820,664	6,795,652	106,838,508	69,992,559
2038	60,138,863	17,441,067	6,878,585	112,233,427	76,414,216
2039	59,592,478	18,083,555	6,960,379	118,133,402	83,584,858
2040	58,803,201	18,748,896	7,040,889	124,597,213	91,583,797
2041	57,815,036	19,437,882	7,119,966	131,687,346	100,430,158
2042	56,641,502	20,151,334	7,197,451	139,468,934	110,176,217
2043	57,911,215	20,890,098	7,273,176	147,911,717	118,163,775

EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2014, and does not take into account any subsequent changes.

1. Administration

Each of the 105 contributory retirement systems for public employees of the Commonwealth of Massachusetts are guided by the applicable provisions of Chapter 32 of the Massachusetts General Laws and other applicable statutes. Although these boards operate semi-independently, there is a uniform set of rules governing benefits, eligibility, contributions, financing, and accounting.

2. Participation

Participation is mandatory for all full-time employees whose employment commences prior to age 65. Eligibility with respect to part-time, professional, temporary, or intermittent employment is governed by the local board. Membership is optional for certain elected officials, State officials appointed by the Governor, and certain hospital interns.

There are four classes of membership as follows:

- (i) Group 1: Most general employees in State and local government
- (ii) Group 2: Certain specified hazardous duty positions
- (iii) Group 3: State police officers and inspectors
- (iv) Group 4: Local police officers, firefighters, and designated employees of the municipal light department.

For members in more than one group, participation will be proportional.

Chapter 176 of the Acts of 2011 created different plan provisions within these groups for those hired on or after April 2, 2012.

3. Salary

Salary is defined as gross regular compensation. Salary <u>does not</u> include bonuses, overtime, severance pay, unused sick leave credit, or other similar compensation.

4. Member Contributions

Member contributions vary depending upon date hired as follows:

Member					
Date of Hire	Contribution Rate				
Prior to 1975	5.0% of Salary				
1975 to 1983	7.0% of Salary				
1984 to 1996	8.0% of Salary				
1996 and Later plus	9.0% of Salary				
1979 and Later	2.0% of Salary in excess of \$30	0,000			

For Group 1 employees who become members on or after April 2, 2012, the Contribution Rate shall be 6% after the completion of 30 years of service.

5. Average Salary

Average salary is used to determine a participant's benefit. It is defined as the average salary during the three consecutive-year period that produces the highest average. (Alternatively, if a greater amount results, it is the average rate of salary earned during the period or periods, whether or not consecutive, that constitutes the last three years preceding retirement.). For employees who become members on or after April 2, 2012, the averaging period shall be five years.

6. <u>Creditable Service</u>

In general, creditable service is awarded during the period in which a member contributes to the retirement system.

7. Service Retirement

a. Eligibility:

For an employee to be eligible for service retirement (also referred to as superannuation), one of the following conditions must be met:

- (i) completion of 20 years of service
- (ii) for an employee hired prior to January 1, 1978, attainment of age 55 as an active member
- (iii) for an employee hired on or after January 1, 1978, attainment of age 55 as an active member and completion of ten years of service
- (iv) for a Group 1 employee hired on or after April 2, 2012, attainment of age 60 and completion of ten years of service

b. Benefit Amount:

The retirement allowance is determined as a product of the participant's Benefit Rate times Average Salary times Creditable Service, where Benefit Rate is determined from the following table for those hired prior to April 2, 2012:

Age at	Perce	ntage of Average	Salary
<u>Retirement</u>	Group 1	Group 2	Group 4
65 or Over	.025	.025	.025
64	.024	.025	.025
63	.023	.025	.025
62	.022	.025	.025
61	.021	.025	.025
60	.020	.025	.025
59	.019	.024	.025
58	.018	.023	.025
57	.017	.022	.025
56	.016	.021	.025
30	.010	.021	.025
55	.015	.020	.025
54	.014	.014	.024
53	.013	.013	.023
52	.012	.012	.022
51	.011	.011	.021
	0.4.0		
50	.010	.010	.020
49	.009	.009	.019
48	.008	.008	.018
47	.007	.007	.017
46	.006	.006	.016
45	.005	.005	.015
43 44			
	.004	.004	.004
43	.003	.003	.003
42	.002	.002	.002
41	.001	.001	.001

For those hired after April 1, 2012 who retire with less than 30 years of service, the following rates are applied:

Age at	Percentage of Average Salary				
Retirement	Group 1	Group 2	Group 4		
67 or Over	.0250	.0250	.0250		
66	.0235	.0250	.0250		
65	.0220	.0250	.0250		
64	.0205	.0250	.0250		
63	.0190	.0250	.0250		
	0.4 = =	0.4.7.0	0.2.7.0		
62	.0175	.0250	.0250		
61	.0160	.0235	.0250		
60	.0145	.0220	.0250		
59		.0205	.0250		
58		.0190	.0250		
57		.0175	.0250		
56		.0160	.0235		
55 5.4		.0145	.0220		
54			.0205		
53			.0190		
52			.0175		
51			.0160		
50			.0145		

For those hired after April 1, 2012 who retire with at least 30 years of service, the following rates are applied:

Age at	Percentage of Average Salary		
Retirement	Group 1	Group 2	Group 4
67 or Over	.02500	.02500	.02500
66	.02375	.02500	.02500
65	.02250	.02500	.02500
64	.02125	.02500	.02500
63	.02000	.02500	.02500
62	.01875	.02500	.02500
61	.01750	.02375	.02500
60	.01625	.02250	.02500
59		.02125	.02500
58		.02000	.02500
57		.01875	.02500
56		.01750	.02375
55		.01625	.02250
54			.02125
53			.02000
52			.01875
51			.01750
50			.01625

8. <u>Deferred Vested Retirement</u>

a. <u>Eligibility</u>:

A participant who has completed ten or more years of creditable service is eligible for a deferred vested retirement benefit.

b. Benefit Amount:

The participant's accrued benefit is payable commencing at age 55, or may be deferred until later at the employee's option.

c. Refund of Contributions:

In lieu of the deferred pension benefit, a member may elect to receive a refund of their accumulated contributions. Members with ten or more years of service are entitled to 100% of the credited interest on their contributions. Members with five to ten years of service are entitled to 50% of the credited interest on their contributions. No credited interest is provided for members with less than five years of service.

9. Accidental Disability

a. Eligibility:

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

b. Benefit Amount:

The accidental disability amount is 72% of annual salary plus \$751.80 per year for each child plus an additional annuity based upon accumulated Member Contributions with credited interest.

10. Ordinary Disability

a. Eligibility:

An ordinary disability occurs when a member becomes permanently and totally disabled due to sickness or injury that is not job related. In order to be eligible for an ordinary disability benefit, a member must have ten years of service (and be less than age 55 or age 60 if hired on or after April 2, 2012).

b. <u>Benefit Amount</u>:

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55 (age 60 if hired on or after April 2, 2012). If the member was a veteran, the benefit is 50% of the member's final rate of salary during the preceding 12 months, plus an annuity based upon accumulated Member Contributions plus credited interest. If the participant is over age 55 (age 60 if hired on or after April 2, 2012), he

will receive not less than the superannuation allowance to which he is entitled.

11. Survivor Benefits

a. Occupational Death:

The survivors of a member who dies due to an occupational injury will be entitled to a lump sum return of contributions plus a pension benefit equal to 72% of the participant's annual salary.

b. Non-Occupational Death:

Upon the death of a member other than due to an occupational injury, the designated beneficiary will be entitled to a retirement benefit as if Option C had been elected with a minimum of \$250 per month to the surviving spouse, plus \$120 for the first child, plus \$90 for each additional child. If no beneficiary is designated and if the employee worked two years, and is married at least one year, the spouse may elect benefits. If there is no designated beneficiary or surviving spouse, then member contributions are returned. If there are dependent children but no surviving spouse, they may elect minimum survivor benefits of \$250 per month plus \$120 for the first child and \$90 for each additional child.

c. Refund of Contributions:

Upon the death of a member not entitled to survivor benefits, the beneficiary is entitled to a refund of all member contributions with interest.

12. <u>Cost-of-Living Increases</u>

In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a cost-of-living adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees, and beneficiaries who have been receiving benefits payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is \$12,000. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the State and are not the liability of the Retirement System.

13. Postretirement Death Benefits

Any benefits following the death of a member after retirement are based upon the form of benefit the participant elected at the time of retirement. There are three available forms as follows:

- (i) Option A Life annuity
- (ii) Option B Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member
- (iii) Option C Life annuity with 66-2/3% of benefit continued after death of member to designated joint annuitant

EXHIBIT 6 – ACTUARIAL METHODS AND ASSUMPTIONS:

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

1. Member Data

The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

2. Valuation Date

January 1, 2014.

3. Actuarial Cost Method

The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

4. Rate of Investment Return

It is assumed that the assets of the fund will accumulate at a compound annual rate of 7.75% per annum.

5. Salary Scale

It is assumed that salaries including longevity will increase at a rate of 3.0% per year.

6. <u>Cost-of-Living Increases</u>

Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and \$12,000 per year.

7. <u>Value of Investments</u>

Assets held by the fund are valued at market value as reported by the Public Employees' Retirement Administration Commission (PERAC). The actuarial value of assets is

determined using a five-year smoothing of asset returns greater than or less than the assumed rate of return.

8. Annual Rate of Withdrawal Prior to Retirement

Based on an analysis of experience, the assumed annual rates of withdrawal may best be illustrated by the following rates at the following ages:

<u>Service</u>	General <u>Employees</u>	Police and Fire Employees
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

9. Annual Rate of Mortality

It is assumed that both pre-retirement and post retirement mortality are represented by the RP-2000 Mortality Table for males and females, adjusted to 2015 with Scale AA. Mortality for disabled members is represented by the RP-2000 Mortality Table set forward two years for all disabled members.

10. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages for those hired prior to April 2, 2012:

	Male General	Female General	Male and Female Police and Fire
Age	Employees	Employees	Employees
50	0.0100	0.0150	0.02000
51	0.0100	0.0150	0.02000
52	0.0100	0.0200	0.02000
53	0.0100	0.0250	0.05000
54	0.0200	0.0250	0.07500
55	0.0200	0.0550	0.15000
56	0.0250	0.0650	0.10000
57	0.0250	0.0650	0.10000
58	0.0500	0.0650	0.10000
59	0.0650	0.0650	0.15000
60	0.1200	0.0500	0.20000
61	0.2000	0.1300	0.20000
62	0.3000	0.1500	0.25000
63	0.2500	0.1250	0.25000
64	0.2200	0.1800	0.30000
65	0.4000	0.1500	1.00000
66	0.2500	0.2000	1.00000
67	0.2500	0.2000	1.00000
68	0.3000	0.2500	1.00000
69	0.3000	0.2000	1.00000
70	1.0000	1.0000	1.00000

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages for those hired on or after April 2, 2012:

	Male General	Female General	Male and Female Police and Fire
Age	Employees	Employees	Employees
50	0.0000	0.0000	0.0100
51	0.0000	0.0000	0.0100
52	0.0000	0.0000	0.0200
53	0.0000	0.0000	0.0200
54	0.0000	0.0000	0.0200
55	0.0000	0.0000	0.0500
56	0.0000	0.0000	0.0750
57	0.0000	0.0000	0.1500
58	0.0000	0.0000	0.1000
59	0.0000	0.0000	0.1000
60	0.0500	0.0650	0.1000
61	0.0650	0.0650	0.1500
62	0.2000	0.1500	0.2000
63	0.2000	0.1300	0.2000
64	0.3000	0.1500	0.3000
65	0.2500	0.1250	1.0000
66	0.2200	0.1800	1.0000
67	0.4000	0.2500	1.0000
68	0.3000	0.2000	1.0000
69	0.3000	0.2000	1.0000
70	1.0000	1.0000	1.0000

12. Annual Rate of Disability Prior to Retirement

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following probabilities at the following ages:

Attained <u>Age</u>	General <u>Employees</u>	Police and Fire Employees
20	0.0001	0.0020
30	0.0003	0.0060
40	0.0010	0.0060
50	0.0019	0.0250

In addition, it is assumed for the general employees that 45% of all disabilities are ordinary (55% are service connected). For police and fire employees, 10% of all disabilities are assumed to be ordinary (90% are service connected).

13. Family Composition

It is assumed that 80% of all members will be survived by a spouse and that females (males) are three years younger (older) than members.

14. Administrative Expenses

The normal cost is increased by an amount equal to the anticipated administrative expenses for the upcoming fiscal year. The amount for fiscal year 2015 is \$1,450,000. It includes a load for the anticipated net effect of Chapter 32 Section 3(8)(c) transfer payments between systems was included. The costs are anticipated to increase at 3.0% per year.

EXHIBIT 7 – GLOSSARY OF TERMS:

This glossary summarizes the technical terms contained in this report.

1. Actuarial Accrued Liability

That portion of the Actuarial Present Value of plan benefits that is not provided for by future employer Normal Costs or employee contributions.

2. <u>Actuarial Assumptions</u>

Assumptions as to the occurrence of future events affecting the Retirement System such as:

- Rates of investment returns
- Increases in a member's salary
- Inflation
- The probability of mortality, turnover, disablement
- Retirement at each age and other relevant items

3. Actuarial Cost Method

A procedure for allocating the Actuarial Present Value of pension plan benefits between Normal Cost and Actuarial Accrued Liability.

4. Actuarial Present Value

The single sum amount required at the valuation date that is required to provide for anticipated future events based upon the terms of the plan and the Actuarial Assumptions.

5. Forecast

A projection of future benefit payments or contribution requirements based upon the terms of the plan, the current asset amounts, the Actuarial Assumptions, and additional assumptions as to the replacement of terminating employees with new employees.

6. Normal Cost

That portion of the Actuarial Present Value of future benefits that is assigned to the current year.

7. <u>Unfunded Actuarial Accrued Liability</u>

That portion of the Actuarial Accrued Liability that is not provided for by current actuarial value of assets.

8. Valuation Method

The method used to divide the cost of future benefits among the Actuarial Accrued Liability, the current year's Normal Costs, and future years' Normal Costs. The resulting current funding requirement is then determined as the current year's Normal Cost plus the payment necessary to amortize the Unfunded Actuarial Liability.

9. Vested Liability

That portion of the Actuarial Present Value of Accrued Benefits that a member would be entitled to if the member terminated employment with the employer as of the valuation date.

CERTIFICATION:

This report fairly represents the actuarial position of the City of New Bedford Retirement System contributing as of January 1, 2014, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost are reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

Sherman Actuarial Services, LLC

Daniel W. Therman

Daniel W. Sherman, ASA, MAAA

Enrolled Actuary No. 11-4086

September, 2014